

What is claimed is:

1. A method of polishing an optical fiber connector, said method comprising the steps of:

5 providing an optical fiber connector which comprises a main body having a front surface, an opposing back surface, a plurality of throughholes extending therethrough from said back surface to said front surface, and optical fibers each extending through a respective one of said throughholes and having a front end portion exposed at said front surface of said main body;

10 polishing said front surface of said main body with a textile pad free of abrading particles affixed thereto and a first slurry, said textile pad etching said front surface preferentially relative to said optical fibers such that the front end portions of said optical fibers protrude beyond the preferentially etched front surface of said main body; and

thereafter polishing said front portions of said optical fibers with a porous and  
15 compressive sponge-like material without abrading particles affixed thereto and a second slurry such that said front end portions of said optical fibers protrude beyond said preferentially etched front surface of said main body by lengths with variations which are within a specified value about an average length.

20 2. The method of claim 1 wherein said average length is over 1 micron.

3. The method of claim 2 wherein said average length is over 3 microns.

4. The method of claim 2 wherein said specified value is 0.5 microns.

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5. The method of claim 3 wherein said specified value is 0.5 microns.

6. The method of claim 4 wherein said optical fibers are arranged linearly through said main body and the maximum difference between the protruding lengths of a  
30 mutually adjacent pair of said optical fibers is less than 0.2 microns.

7. The method of claim 5 wherein said optical fibers are arranged linearly through said main body and the maximum difference between the protruding lengths of a mutually adjacent pair of said optical fibers is less than 0.2 microns.

5 8. The method of claim 1 wherein said textile pad comprises nylon and said first slurry includes abrading particles with average diameter in the range of 3-5 microns.

9. The method of claim <sup>2</sup>1 wherein said textile pad comprises nylon and said first slurry includes abrading particles with average diameter in the range of 3-5 microns.

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10. The method of claim 1 wherein said sponge-like material is polyurethane with hardness between 20-80 duro, having pores with sizes between 20-100 microns.

11. The method of claim 8 wherein said sponge-like material is polyurethane  
15 with hardness between 20-80 duro, having pores with sizes between 20-100 microns.

12. The method of claim 10 wherein said second slurry includes abrading particles with average diameter in the range of 0.1-2.0 microns.

13. The method of claim 11 wherein said second slurry includes abrading  
20 particles with average diameter in the range of 0.1-2.0 microns.

14. The method of claim 12 wherein front surfaces of said optical fibers have surface roughness  $R_a$  of less than 2nm after being polished by said sponge-like material.

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15. The method of claim 13 wherein front surfaces of said optical fibers have surface roughness  $R_a$  of less than 2nm after being polished by said sponge-like material.

16. A polishing pad comprising a layer of a porous and compressive sponge-  
30 like material and an adhesive tape on which said layer is attached, said sponge-like

material having hardness in the range of 20-80 duro, having pores with sizes in the range of 20-100 microns.

17. The polishing pad of claim 16 wherein said layer has a thickness in the  
5 range of 300-1500 microns.